

IMPORT SUBSTITUTION

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HENRY BRUTON*

Williams College

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1. Introduction

During the past 100 to 200 years, the countries of Western Europe, northern North America, and Japan have experienced more or less sustained increases in measured GDP per capita; while in the countries of Asia (except Japan), Latin America, and Africa the output of goods and services did not increase in this steady, regular fashion. In the late 1940s, after the dust of World War II had settled, the world became acutely conscious of the fact that a relatively small number of countries and a small proportion of the world's population had access to a vastly larger quantity of goods and services per person than was the case in most other countries of the world. Even more fundamental was the fact that in most countries, a large proportion of the population lived in severe poverty. The obvious question was then and remains now: Why does this difference in per capita output prevail? And its corollary: Can the GDP-poor countries so modify their economies that output, and welfare, increase as a consequence of the routine functioning of the economy?

One answer to the latter question was at once evident: make over the GDP-poor countries in the image of the GDP-rich countries. The rich countries, therefore, offered an example to be followed or, more specifically, to be learned from. The existence of rich countries offered something else: they created a world environment significantly different from that which prevailed while they were getting rich. Earlier, there were no equivalent rich countries that could be copied or that created a volatile world environment in which the then developing countries had to find their way. The modern developing countries, however, must achieve the metamorphosis of their economies – from non-growth to growth – in a world dominated by a relatively small number of already rich and still growing economies. The developing country must recognize this fact, it must seek to learn from the already rich countries, even while protecting itself from a number of problems that the existence of rich countries creates. Import substitution may be described as a development strategy that seeks to accomplish both of these objectives: to learn from, and in general gain from, the rich countries, and, at the same time, to so protect the domestic economy that the society can find its own way, can create its own form of development, and can redo its economy so that it can function on equal terms in the community of nations.

The idea is not so much a matter of the less developed countries catching up with the rich, although some catching up is part of the story. Rather, it is a matter of creating an economy that is sufficiently flexible, diversified, and responsive that it can weather shocks, can respond to and indeed create opportunities for growth, and can, on its own, generate continually increasing welfare for its people. The basic rationale of the import substitution strategy is that in order

for the modern, less developed country to make over its economy in the image just described, it needs protection, for a while at least, from the might of the GDP-rich countries. This chapter is about that protection, its content and the instruments by which it is effected, and, of equal importance, what happens in the country while it is experiencing this protection. Finally, attention must be given to how import substitution ends or can be ended, once the country has accomplished the objectives that the protection was to make possible.

Import substitution is then a matter of two transitions. The first transition is that from a system characterized by lack of growth to a flexible, responsive system in which social welfare is continually rising. This takes place behind some form of protection. The second is the transition from protection to participation on a more equal footing in the world economy. Between these two transitions lies the process by which the economy achieves its metamorphosis.

The notion of import substitution in this chapter is wider than in most of the literature. It considers the major, overriding issue to be the rationale of protection in making over the non-growing economy into a growing one. This question has links with virtually all aspects of development. In focusing on this broad issue, some important specific points have to be neglected, at least to some degree. At the same time, I would argue that the issue to which the chapter directs primary attention is *the* basic issue of the import substitution strategy of development. The more conventional issues of import substitution – tariff and exchange rate policy, use of direct controls, etc. – are examined but they, it is argued, are not the basic content of the strategy.

It may be helpful to compare the import substitution strategy with the most obvious alternative, an outward looking or export oriented strategy. There are no examples of an unambiguously successful application of the import substitution strategy. Protection in one form or another, however, has characterized most developing countries, including those (e.g. Korea and Taiwan) whose development is usually classified as a success story. India has perhaps been more committed to import substitution than has any other large country, and, as discussed in the following pages, there is no doubt that the costs of this commitment have been high. At the same time there is also convincing evidence that India has achieved a technological maturity that exceeds that of any other developing country. The failure of India's strategy, it will be argued, has been due to its method of implementation, not with the strategy itself.

Bela Balassa, Anne Krueger, and many others have accumulated a great deal of statistical and qualitative evidence that show many advantages to an outward looking, export oriented strategy. Balassa reports on their studies in Chapter 31 of this Handbook. Although the evidence that is offered in Balassa's chapter (and elsewhere) is impressive, it cannot be considered conclusive. There is considerable ambiguity with respect to a number of key variables, e.g. "appropriate" exchange rates, export promotion, and terms of trade. In addition, the outward looking

strategy gives little attention to the difficulties of decision-making and policy-changing in most developing countries. It may also be noted that world trade in the 1950–1980 period grew at rates unmatched in history, and this too contributed greatly to the apparent success of export oriented policies. The point here is not that outward looking has, in fact, failed, but rather that the evidence remains as yet inconclusive. Hence, the study of import substitution, as defined in this chapter, is an important component of development economics.

It may be noted, as well, that the two strategies have much in common. Both are intended to induce learning and productivity growth, and both emphasize that economic strength requires resilience and the capacity to carry through continuous adjustments in response to changing circumstances. Most (not all) proponents of both strategies also acknowledge that our understanding of productivity growth is still quite primitive. This matter of similarity is referred to again in the final section of this chapter, the section on policies.

2. Import substitution and its critics

In this section I first examine the rationale for an import substitution strategy in some detail. Then, I examine the process by which a country, behind its protection, prepares to face the world. Finally, I comment briefly on arguments that dispute the validity of the whole notion.

2.1. *In defense of import substitution*

Import substitution is often “measured” by a change in the ratio of imports to the total availability (imports plus domestic output) of a single product or category of products. If this ratio falls over time, then import substitution is said to take place in that particular sector. This has happened, of course, for many activities in many countries, and at the same time aggregate imports as a proportion of total GDP have not declined and often have even risen. This means that the structure, defined as the composition of output, of the economy is changing because some products that were previously imported are no longer imported in the same amount, while total demand for imports as a proportion of income is generally unchanged. The idea is that by replacing the imports of certain commodities by domestic production, the economy will be so modified that it will begin to be more independent, more resilient, more diversified, and better able to generate increasing welfare as a matter of routine. Replacing the imports of certain individual products by their domestic production is, therefore, a means to an end, not an end itself. Three additional points may be noted.

(1) Many developing countries have levied tariffs, quotas, and other protective devices to meet balance of payment difficulties. The objective in this situation is simply to curtail imports to bring the balance of payments under control and is, therefore, sure to be different in effect from an import substitution policy that is carefully and explicitly worked out. It will be argued later that one of the important reasons why import substitution has often seemed to be the source of grave problems is the fact that policy-making has so frequently been ad hoc, and that various parts of the set of policies have been inconsistent with each other. The policy-making process in a particular country is, therefore, relevant to understanding how and why countries pursue the policies that they do.

(2) The import substitution rationale is also distinct from the traditional infant industry argument for the protection of a particular activity. That argument rests on the assumption that an activity can be identified which, if given some initial period of protection, will later become able to compete in an unprotected market. In the case of import substitution one might speak of an infant economy that needs protection while it develops those characteristics it must have to produce rising welfare.

(3) Import substitution should also be distinguished from "delinking". This latter notion examined with great insight by Diaz-Alejandro (1973) refers to a permanent cutoff of a country in all or some respects from the rest of the world in order for truly indigenous development to occur. Delinking does not represent a time during which the economy is restructured and reorganized in order for it to take its place in the world economy.

The basic characteristics of a strong economy are flexibility and the capacity to transform resources into a wide range of products, and the capacity to determine its own economic destiny. There are several reasons why a non-growing economy needs protection to develop these characteristics.

The main reason is that the proximate source of long-term growth is the increased productivity of labor that is produced by more physical capital and by new knowledge. The new knowledge is either built into the physical capital or is acquired by (built into) the labor itself. Conventionally, saving (or foreign aid or loans) is the source of new capital, but knowledge is, of course, necessary to build new capital, and indeed one can say that new knowledge is always necessary. So then development is essentially and ultimately a matter of learning and searching, of trial and error, in a context of continuous change [Nelson, Schultz and Slighton (1971), Sheahan (1972), Bruton (1985)]. Learning applies to a variety of activities, most obviously to production, but also to consumption, and to life styles in general. In this context protection is intended to extend the opportunities for this learning process.

Protection then is a means of inducing diversification and the learning upon which development is based. More accurately, perhaps, it is a means of creating a process of development that builds on search and learning. The goal is to create

an economy with the capacity to move in various directions as opportunities are provided and new knowledge is accumulated.¹ When such capacity exists, the economy can *then* seek to concentrate or specialize, because with such capacity it can more readily opt out of a declining sector into one that is recognized to be expanding. If that capacity is lacking, rapid, unanticipated changes are likely to impose major costs on the community. For example, an abrupt change in the terms of trade will result in reduced availabilities rather than in a switch to new activities or other adjustments. In a world of continuous change in technology, tastes, political affiliations, and ideas of the good life, development is necessarily a matter of trial and error, of moving in one direction today and another tomorrow. The capacity to do this at relatively low costs is an essential characteristic of a growing economy. Import substitution seeks to create this characteristic.

2.2. *What kind of import substitution?*

If protection in the early stages of development is appropriate, one must then ask about the details of that protection. As is often the case, stating general principles is fairly easy, but the formulation of explicit policies is far from simple. Therefore, I begin with the general principles.

If the accepted rationale of import substitution is to protect an infant economy while it matures to the point that it can perform satisfactorily in the world economy, then the society must, while protected, learn. So import substitution must create an environment in which learning occurs. There must then be strong inducements, to search, to experiment, to test – to learn. Protection that simply assures potential producers of a known market may move investments in new directions, but it may also induce the quiet life for the protected monopolist, while large parts of the society remain in severe and continuing poverty. In this situation nothing really happens, and the whole process yields only costs, no returns. Protection may also create distortion, which in this context means that the new activities are inconsistent with the economy's factor endowment. Distortions may add to the cost of the protection by creating bottlenecks that force the economy to reduce its output in order to live with or correct the bottlenecks. There must be accurate signals to induce economic agents to take advantage of the economy's factor endowment. Much of the criticism of import substitution

¹I.M.D. Little, generally a strong critic of import substitution, expresses a similar idea in his discussion of India. He writes at one point: "Moreover it is very early for India to be able to guess where her comparative advantage *will* lie." In the same article, a few pages later, he writes: "In a country as large as India with a wide complement of natural resources, it would be surprising if it *did not turn out* to be economical for India to produce a little of everything" [Little (1960, p. 25), italics added]. In both these statements Little is saying that in some future *after* India has changed her structure into some other state, *then* she will allocate resources in a manner to maximize in the conventional fashion.

has concentrated on the distortions created by policies aimed at protection. It is important to the argument of this chapter that the protection it studies does not impose major distortions. The argument for import substitution is not an argument for distortions or that distortions are not important.

It is recognized that protection generally imposes short-run costs on the economy. Availability of goods and services is expected to be less at the outset of the import substitution strategy than would have been the case with free trade. This reduced availability is then a cost of the protection, a cost of the import substitution strategy. There is the further question of who in the society bears these costs. The reduction in welfare associated with a particular policy may depend on which group in the society bears the major part of the cost. Another way of looking at this cost is possible: the reduced availability of goods and services can be considered an investment. The return on this investment is a more flexible, more responsive economy whose operation can lead to increased welfare. The shorter the period of import substitution as a development strategy, therefore, the less its cost and the higher the return on the investment. This obvious consideration means that the ending or phasing out of import substitutes is an essential part of the strategy itself. As later discussion will show, the ending of an explicit import substitution policy is often an economically difficult and politically dangerous undertaking; hence, there is a strong temptation to delay it.

The other main element of the cost of the investment is that associated with the new activities. Earlier arguments emphasized the importance of diversification, of the creation of new activities, possibly at the expense of the specialization that comparative advantage dictates. The greater the violation of the dictates of comparative advantage, the greater the costs of the policy. So unless a large violation of comparative advantage is expected to yield a "large amount" of learning, the presumption is that these costs are to be kept low. To put it a bit differently: the less comparative advantage is violated, the lower is the cost of the investment. One must remember, of course, it is the cost of creating a new economy, i.e. it is the benefits relative to costs that matter. Even so, the argument here makes clear that an effective import substitution policy does not ignore the conventional message of the static allocation theory of international production known as comparative costs.

The other side of the allocation question is even more important. Extreme violations of the conventional criteria can bring the growth process to a complete halt or slow it down markedly. A stop-go economic performance is especially damaging to learning and to productivity growth. It will be argued later that the primary objective of conventional allocation considerations is to enable growth to continue without interruptions to correct bottlenecks; it is not to achieve the maximum output from given resources in the short run.

To summarize: an import substitution strategy can be defended in terms of the need for protection while a non-growing economy establishes the conditions and

characteristics necessary for its routine operations to result in rising social welfare. The main consideration has to do with searching and learning – on the part of all economic agents. Since import substitution imposes a cost on the society, it may be identified as an investment. Two specific sources of costs are especially important: the length of time that the import substitution strategy is in effect and the possibility that it will create distortions of a particularly damaging kind. It was also noted that costs may be affected by unproductive violations of comparative advantage; that is, effective import substitution does not ignore traditional static allocation issues.

Protection can and does take many forms. Impediments to imports are among the most frequently discussed and the best understood, but there are many other forms. Restricting of foreign investments may be an important means of protection, and attitudes toward foreign investment represent an important distinction among developing countries. At the same time foreign investment may also be a source of learning and knowledge transfer. Our understanding of the role of foreign investment in these latter terms is very incomplete, and actual decisions by developing countries are frequently made on the basis of misleading information and irrelevant argument. Controlling the inflow of labor, including foreign consultants and advisers, is yet another form. Tourism may be made easy or difficult, and a government may discourage its own nationals from foreign travel, for reasons independent of foreign exchange consideration. An exchange rate policy can provide protection. In these times of rapid capital movements, financial and product aid, huge earnings from a single mineral, etc. the definition of the “correct” exchange rate is exceedingly difficult. A society may choose to protect its values and life styles by keeping out certain publications, television shows, missionaries, etc. Certain forms or levels of conventional protection may have different effects in one country from those they have in another because various traditions and institutions themselves may provide differing degrees of protection. As our understanding of development and welfare deepens, it becomes necessary to recognize these wider considerations, and to introduce them into our analysis.

These kinds of issues make it difficult to determine how “open” a particular economy really is, and especially how open one society is compared to another. Most observers would probably agree that the Republic of Korea is more open than the Democratic People’s Republic of Korea, but one would be less confident in asserting that the Korean economy was more open in the first half of the 1960s than was the Brazilian economy. While import substitution in the literature has been discussed largely in very narrow terms that apply to specific sectors of the economy, it is doubtful if policy-makers have thought in such narrow terms. These issues arise in large part because, as noted earlier, contemporary developing countries pursue their development objectives in a world dominated by the rich and the mighty. The difficult task is to learn from the rich and the mighty

without simply imitating them or allowing them to stand in the way of the country finding its own path.

2.3. *Searching and learning*

To this argument we now need to add a theory of search and a theory of learning. There does not seem now to be a conventional wisdom on learning that can be plugged into the arguments summarized above. There are, however, important insights and hypotheses available, and it is helpful to discuss some of these briefly.

The notion that import substitution induces learning rests on the hypothesis that the exposure of individuals to new phenomena, new ideas, and new things produces learning. Repeated routines develop dexterity (in the Adam Smith pin factory, for example), but little learning. At the same time, the “new” to which exposure is made must be “near” that which is familiar. It must be linked in some way to the familiar to be recognized and acknowledged, yet novel enough to provoke new understandings and new insight.

Hirschman (1968) illustrates this point in noting that “industrialization via import substitution becomes a highly sequential, or tightly staged affair...it is the basic reason for which the import substitution industrialization process is far smoother, less disruptive, but also far less learning intensive than had been the case for industrialization in Europe, North America, and Japan” (p. 6). Hirschman goes on to argue that industrialization that is wholly a matter of imitation and importation of a tried and true process eliminates the travail that produces learning. The importation of a ready-made process is based on the notion that simply “having” a new factory or machine produces the diversification and responsiveness that enable an economy to provide increasing welfare for its people. Hirschman’s argument tells us that this presumption is misleading. He emphasizes that the early industrialization in Western Europe and the United States was not limited to the production of light consumer goods, but from the beginning included the production of capital goods. There were no capital goods being produced elsewhere that could be imported. The modern less developed country that imports foreign-made capital goods to produce the consumer good then eliminates a significant source of learning. In particular this creates great difficulties for the importing country to adapt, in any fundamental way, the imported machine to fit local conditions. Given this situation, Hirschman argues, factor-price distortions may not be especially important in explaining what happens to the economy.

A diagram may be used to develop the argument further. Figure 30.1 is adapted from Nelson et al. (1971, p. 96) who use it for a somewhat different purpose. The curve *AB* traces the productivity of labor, given the assumption of

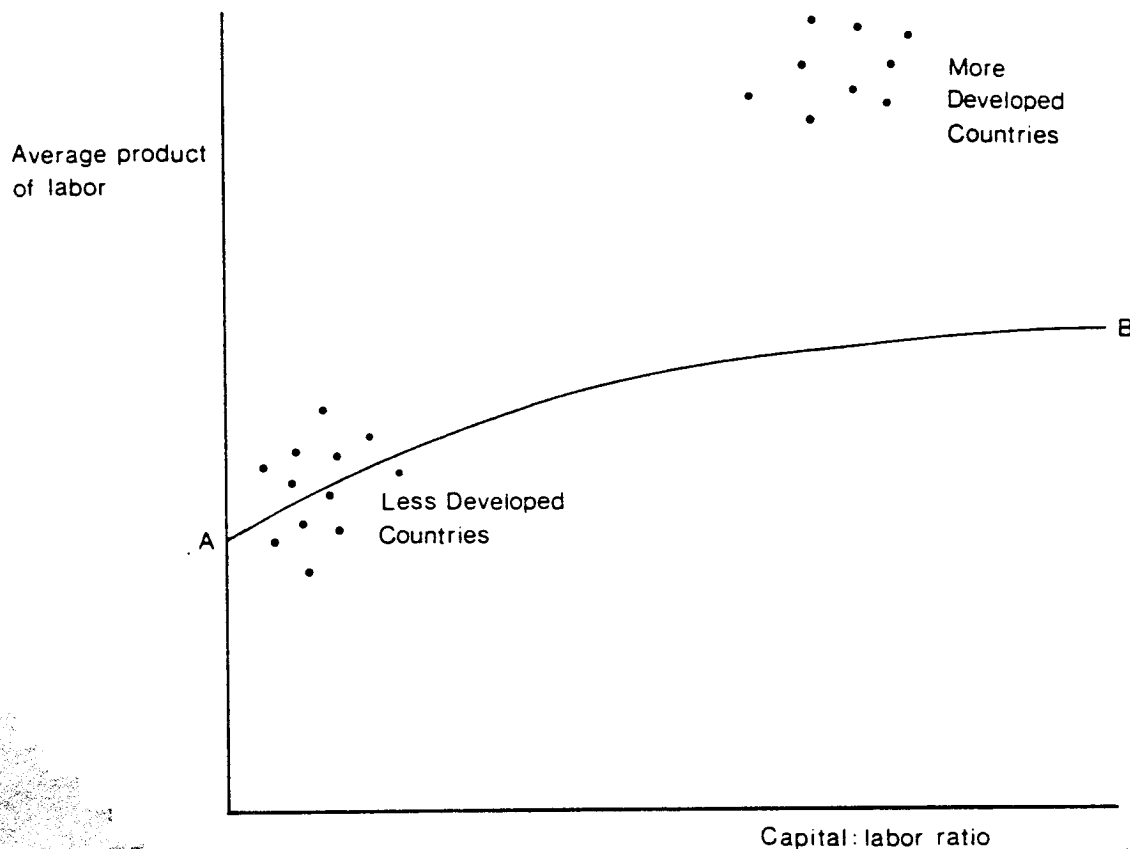


Figure 30.1

no change in the quality of the inputs and no change in the availability of technical knowledge. The curve tells us that if nothing else happens in the less developed country except that capital per worker increases, productivity in the LDC will never reach the level that obtains in the GNP-rich countries. The difference, in broadest terms, is accounted for by technical knowledge and the quality of the labor.

The main message of the diagram for the present argument is a bit different. The rich countries have, over historical time, moved gradually from low capital/labor ratios and low labor productivity, to the position shown in the diagram. One may possibly think in terms of a ladder on which the economies climbed, step by step, to reach the high position on which they now reside. Each step provided the basis, the learning from which the next step could be reached. Each higher step had something in common with the lower step. The movement up this ladder constituted a series of short steps, each related or linked in some way to the preceding ones. For ease in the drawing of the diagram, the argument here is in terms of labor productivity. The more appropriate concept is total factor productivity and this is the concept employed in later sections in discussion of the empirical evidence.

For producers in less developed countries to jump, or seek to jump, from their area to the area of the more developed countries in one mighty leap by importing new machines with the much more productive technology violates this fundamental notion of the learning process – that the new must have some links with the old. If such a big leap is tried, all that can be expected would be an imitation, a copy of that done elsewhere. Some learning doubtless would occur, but in general very little could take place. In particular, one may argue that simply imitating, without having climbed the ladder, will make further productivity growth and further changes difficult indeed, and thereby may make the economy even more vulnerable. Nor will productivity be as high, even where imitation looks complete. Even if skills become available to operate the new machines or new activities, this availability will not contribute to making the economy more flexible and more compatible with the new knowledge. The newly acquired skills are limited to the particular task, and when unexpected problems occur managers are often helpless. Indeed, one of the reasons why repair and maintenance are often so unsatisfactory in newly industrialized countries is that those who use the new technologies and the new machinery are so unacquainted with the underlying principles of how they work.²

This argument does not mean that the present-day developing countries cannot speed up their development beyond that achieved by Western Europe and Northern North America. This learning argument does mean that imitation is not development. It also lends considerable legitimacy to the argument for import substitution summarized above, protection is necessary to help an economy with its learning. More specifically, this notion of learning tells us that the developing country must climb its own ladder, but it can climb at a more rapid rate. It can push the various steps closer together in time.

This notion may be illustrated by four brief examples.

(1) Carlos Diaz-Alejandro has emphasized in several places [e.g. (1970, pp. 260 ff), (1984)] that considerable import substitution took place in Latin American countries in the early part of the twentieth century without all of the complex policies that were followed later in the 1950s and 1960s. There were tariffs, but the main kind of “natural” protection was to be found in the world economy and in the prevailing technology. During the depression of the 1930s, though every country was interested in exporting, international trade was modest and declining. Interruption of shipping and non-military production during World War II

²One may, quite legitimately, raise the question of the operational significance of the argument of these last several paragraphs. There is no specific, universal answer to this question because so much depends on the circumstances in the particular country. The examples and arguments in the text help to give the argument some empirical content, and to identify relevant questions to ask at a specific time and how to go about determining whether the conditions stated in the text are being violated. The most obvious point has to do with the role of foreign investment, foreign aid, and foreign technicians, all which can, and indeed may, bring, or seek to bring, that which violates the learning argument in the text. More on the role of foreign investment as we go along.

not only raised prices of imported goods, but frequently meant that imports simply were not available [Baer (1972)]. Similarly, technology and the nature of new products changed more slowly so that adjustments had more time to take place. As a consequence, many Latin American countries concentrated their import replacement on simple commodities (textiles, cement, milk processing, toiletries, etc.) whose technology had not changed much over extended periods of time. There seemed also to be greater consistency of protectionist policies in the 1930s, e.g. tariffs were imposed along with devaluations, and agriculture was generally not penalized, or not penalized heavily. This picture is quite different from the kind of import substitution observed in the 1950s and 1960s.

(2) World War II also provided “natural” protection. During the war period, imports fell sharply, especially those classified as capital goods, but intermediate goods as well. Yet foreign and domestic demand was strong. There was then a powerful incentive to find ways to increase productivity and output. Indeed, the calculations in Bruton (1967) show that productivity growth during the war years in several Latin American countries was markedly higher than it was in later years. (Data for some other countries, e.g. Egypt and Sri Lanka, suggest a similar picture.) In these years, producers searched for ways to increase the output from the resources available within the country. In the 1950s and 1960s as imports increased and the imitation of the West became a guiding star, productivity growth declined, unemployment and inequality increased, and the rate of growth of measured GNP was more unstable. The message seems to be that evident profit opportunities plus non-distorting protection from the lure of foreign imitation produces the inducements for an economy to find ways to exploit its resources with ever-increasing effectiveness.

(3) A third example that illustrates the protection and learning argument refers to the technological development of the Republic of Korea. This country seems to have made it an essential point in its technological policy to work its way up the kind of ladder described above. There was (until recently) very little direct foreign investment. Thus, the Koreans undertook to do only what they themselves could do, and with strong demand (facilitated by the export biases of policy) the Korean entrepreneurs also had a strong incentive to push hard to find ways to increase output. They learned step by step. There are other factors that must be considered of course (e.g. learning from Japan), but the main point here is simply to illustrate the notion of learning and the corresponding distinction between simply seeking to imitate the rich countries in one great leap and in climbing step by step up an increasing productivity slope.

In these stories, strong and uninterrupted demand that creates obvious profit opportunities plays a key role. Traditional allocation issues matter, not primarily in terms of maximizing output from a given quantity and quality of resources, but in terms of preventing interruptions in growth. Thus, the misallocations that create bottlenecks and force a reduction in demand or in demand growth – the

difficulties that create a stop-go situation – do defeat the growth effort. Good export performance helps prevent balance of payments bottlenecks from forcing a slowing or stopping of growth. Exporting may also indicate learning and responsiveness to incentives that are equally important in preventing the stop-go situations from materializing or continuing. Ranis and Orrock (1985, p. 62) note that “once a country has reached the stage where it is able to compete successfully in international markets, it is likely to have acquired sufficient skill and flexibility to overcome many obstacles (to exporting), including the defensive measures resorted to by the advanced industrial countries”. This illustrates the main theme of this chapter, and the fundamental notion of development that is its point of departure.

(4) The importance of learning and knowledge accumulation may be further emphasized by reference to the policy-making process. It has often been noted that Singapore and Hong Kong have no policy options other than an all-out effort to export manufactured commodities. Korea and Taiwan have little in the way of natural resources. Their only asset is their labor, their people. They, therefore, had to search for ways to make their labor more productive. They had no policy option but to learn. The fact that there are no natural resources upon which to build a country's exports also eliminates the difficult task of managing rents, a task that many countries have found virtually impossible. (See Chapter 29 by Stephen R. Lewis, Jr. in this Handbook.) Countries rich in natural resources find it much easier to rely on such resources, to export them, import capital goods from the West, and put them in place in their country. The experiences of the oil-rich countries teach how difficult it is to use foreign exchange acquired in this way to create a viable, responsive, and equitable economy. One must note, of course, that *not* having natural resources is hardly a sufficient condition for development.

2.4. *The critics of import substitution*

The import substitution approach to development has not been without its critics, and criticisms have greatly intensified in recent years. This subsection seeks to examine some aspects of the more widespread criticism.

(1) The most common point is that import substitution penalizes exports. Exports were deemed important in early arguments because they enabled the importation of the capital goods necessary for investment, and prevented balance of payments problems which seem to plague many developing countries. This criticism became common after it was evident that world trade in the 1950s was quite different from the world trade of the 1930s. Most observers had projected a depressed world trade after World War II, and the bias against exports – to the extent that it was recognized – was not considered a major shortcoming. Had

world trade in the 1950s and 1960s in fact been a repeat of that of the 1930s, then the bias against exports would, of course, have appeared much less damaging.

(2) The development of the notions of Effective Rates of Protection (ERP) and Domestic Resource Cost (DRC) made it possible to measure some of the effects of trade restrictions. Although there are major problems with these concepts and their empirical application, the results obtained did convince many members of the profession that the costs of the trade restrictions were often very high indeed. These calculations also showed that the protection of specific activities was much higher than nominal tariff rates indicated, and, equally important, that rates of protection varied widely among activities in a given country. The cost of restrictions was very high in many cases, and the wide variation in rates contributed greatly to distorting the economy further. The cost also fell unequally on the population, thus exacerbating the income distribution problem. Little (1982, p. 136 ff) has a succinct summary of these general results and many references to the literature.

The cost of distortions in terms of output forgone are generally estimated to be quite low, so it is not clear how much loss is involved as a consequence of distortions introduced by the trade restrictions. It is probably correct to argue, as several people have [e.g. Balassa (1975)], that the cost of distortions is greater in developing countries than in the GDP-rich countries. It is also probably correct to argue that the cost of distortions is greater than conventional estimates make it. Even so, it is less convincing that the distortions per se are an important explanation of observed differences in rates of growth of measured GDP among developing countries. In particular, it is not clear from the literature on this issue exactly how a distortion-free economy grows.

(3) Much has been made of the capital intensity of the investment that has taken place behind the high protection. This capital intensity is usually explained in terms of low real interest rates and an exchange rate/import control policy that made capital artificially cheap. The result has been low rates of growth of employment and increased income inequality. Again, these phenomena have occurred in many countries. The practices leading to these particular consequences, however, do not appear to be a necessary part of an import substitution strategy of development.³ To a significant extent, they are the consequence of the view that prevailed in the 1950s of how growth of output took place, in particular the emphasis on the strategic role of capital formation and the

³In much of the literature the notion of import substitution includes a range of policies that result in considerable distortion being imposed on the economy. Of course, many countries have in fact done this, but it does not seem to be a necessary part of protection itself. It is argued that the main consequence of distortions is to force the economy to stop to correct a problem – balance of payments, inflation, etc. If no such stoppage is necessary, distortions are generally not very important, except possibly in the case where the stops are prevented simply by large-scale inflows of foreign exchange unrelated to production. This general issue is referred to in several places in the text, and in detail in Section 4.

acceptance of the capital-output ratio as fixed. If production coefficients are fixed and if capital formation is the principal (maybe exclusive) source of growth, then the cheap capital approach makes a great deal of sense. The point here is that the import substitution approach, as such, did not include as an essential ingredient excessive capital intensity, but that such excessiveness emerged from prevailing views on development.

(4) The terms of trade of the developing countries have figured prominently in debates about import substitution. Hans Singer's early article [Singer (1950)] was followed by numerous other studies on what had, in fact, happened to the terms of trade of the developing countries. If it were the case that over an extended period a deterioration in the external terms of trade of the latter countries had taken place, this would constitute a strong argument for sharp changes in the composition of their output. Essentially, this would mean that the terms of trade were moving against agricultural products and minerals and in favor of manufacturing and certain services. Later work on this issue has made it reasonably clear that the terms of trade have not moved consistently against developing (or agricultural or mineral producing) countries as a group, and indeed that, in general, they fluctuate in several ways. A recent renewal of the debate on this issue is between Singer and Balassa [Meier and Seers (1984, pp. 273-312); see also Spraos (1980)]. There is little doubt, however, that the Singer argument combined with similar arguments from the United Nations Commission for Latin America influenced policy toward import substitution especially in Latin America. The conclusion remains that in a flexible, adapting economy the terms of trade are of little interest, except in a very short run. They perform the same role that relative prices perform in any economy; they are meant to provide information on how resources, especially investment resources, are to be allocated.⁴

(5) A final criticism refers to some new thinking and evidence on the role of exports in development. As already noted, most import substitution policies discriminate against exports. The consequences of this in earlier arguments was that it led to balance of payments problems and slowed down the imports of the capital goods which were deemed to be the basis of the growth process. As the emphasis on the role of capital formation in development has waned, this

⁴The "vent-for-surplus" theory of international trade is of some interest in the present context. That theory rests on the assumption that, because of great internal immobility and specificity of resources, a non-trading country is not able to use fully all of its productive capacity. The opening up foreign trade – or the decline in international transportation costs – may then result in an increase in the demand for those products for which the country in question has excess productive capacity. So output and possibly employment may rise as trade begins for this reason. This argument, not widely discussed in recent years, depends greatly on the inflexibility of the productive capacity. Evidently, where such is the case the reduction in trade could cause reduced output and reduced employment. Trade in this case (as in most cases) would yield immediate benefits, but over a longer run the inflexibility and unadaptability of resources will surely defeat any sustained development effort. On the vent-for-surplus notion, see Myint (1958).

argument has lost some of its power. With increasing attention given to technological change specifically and to productivity growth in general as the key to growth, recent hypotheses suggest that exports are an important means of inducing productivity growth. Exporting then is relevant, not primarily to enable the importing of capital goods, but as a means of increasing the productivity of available resources.

This is an important argument because it links up directly with the fundamental source of output growth. In Section 3 we examine some empirical efforts to test the hypothesis that exports and productivity growth are positively related. The hypothesis makes greatest sense when applied to manufacturing exports. It is unlikely that large-scale exports of oil or other natural resources will have an effect on productivity growth.

It may also be noted that much of the criticism aimed at import substitution is, in effect, criticizing the policy-making process in developing countries; more specifically, it is aimed at the often uncoordinated, unstudied way in which policies are made in many less developed countries. Thus, trade restrictions often appear in response to an urgent balance of payments crisis and restrictive monetary and fiscal policies are imposed after inflation is well established. Similarly, decisions are made to establish a particular industrial activity and then a trade restriction is imposed to enable that activity to exist or an export promotion drive is undertaken at the same time that the domestic currency is greatly overvalued. And on and on. A coherent, well-designed, consistent policy package rarely appears anywhere, whether the general picture is one of import substitution, export promotion, or whatever.

All of these criticisms of import substitution are themselves open to criticism, but they are nonetheless of great importance. Indeed, the particular formulation outlined above of an import substitution strategy recognized these criticisms and tried, at least, to take them into account. It is fair to say that the major limitation of these criticisms is that they neither define a theory of growth nor do they offer an explanation of how and why growth takes place. "Correct" allocation of resources does not assure growth, nor does a high rate of exports. Neither does free trade. At the same time no one doubts that widespread misallocation imposes costs, possibly high costs, on a country. Such costs are much more nearly certain than are the long-run gains from protection. Our understanding of the nature, the content, of productivity growth is still exceedingly primitive, and relevant empirical evidence is just beginning to be accumulated. It is this ignorance of the origins, the real origins, of productivity growth and transformation capacity that, it is argued here, is the basis of the dispute between those who push import substitution and those who advocate openness and outward looking. This says, in effect, that until we have a satisfactory theory of development, a "final" criticism or defense of import substitution is not possible.

3. Some empirical problems and evidence

In this section I examine a variety of experiences of countries which have followed, since the 1950s, at least some aspects of an import substitution approach to development.

3.1. *Points of departure*

When one examines the import substitution experience of a given country, it is convenient to identify three specific characteristics or issues: these may be identified as (1) the initial conditions; (2) the objectives of the government; and (3) the policy-making process. A brief comment on each of these is in order.

3.1.1. *Initial conditions*

As policy-makers looked at their country in the early 1950s – when economic development caught everyone’s attention – they were able to identify various characteristics. The most obvious were, of course, the resource endowment of the country, the labor and management skills, physical capital, technical knowledge, etc. Nevertheless, other characteristics were equally important. The prevailing economic and social organizations, the understanding and interpretation of the country’s history, the prevailing economic and social links (e.g. markets, sources of imports, and source of any expatriates), and the dominant interest groups of the society are among the relevant aspects. Especially relevant were prevailing views about how the economic agents will respond to certain inducements. For example, it seems clear that in the early 1950s most policy-makers and most development economists working on and in developing countries believed that economic agents in these countries could not or would not respond simply to price signals, hence physical planning was necessary. In many countries, as well, policy-makers and others were convinced that the operations of the market were a major source of their difficulties. Similarly, many observers believed that world trade in the ensuing years would be very much like that that prevailed in the 1930s. Such views were an important fact of “initial conditions”, and helped to determine the approach to development that the countries followed.

3.1.2. *Objectives of the government*

Governments have many diverse and inconsistent objectives, but it seems fair to say that the most general objective of most countries at this time – or the point they became politically independent – was to be like the West. This meant not

only a high GNP per capita, but it also meant new industrial activities, new international economic relationships, and greater independence in policy-making. At the same time, it was also an objective of the government to maintain the society's prevailing ethos, the customs, ideas of morality and the good life, that defined its culture and gave society an identity. Some countries (an extreme example is the Democratic People's Republic of Korea) put so much weight on this last objective (and on certain political issues as well) that they isolated themselves behind so much protection that they had virtually no contact with the rest of the world. These objectives are, of course, vague and do not lead to any specific policy or set of policies. It is doubtful if any government or any economic advisor at this time thought seriously in terms of employment, income distribution, regional equity, basic needs, etc. Governments did, however, see their countries as poor relations, and they wanted to change that. Ambiguity of objectives, except at the very general level, was surely an important explanation of the frequently observed inconsistency of policies and the ad hoc nature of many important decisions.

3.1.3. The policy-making process

The most formal policy instrument was the national plan, and many countries spent substantial resources in drawing up a comprehensive plan. Plans varied widely in design and execution, and in impact on economic performance. Plan documents reflected the initial conditions and government objectives just described. In particular, plans concentrated heavily on manufacturing and other new activities and on the idea of the modernization of the economy. Plan-making and plan-implementing demand highly skilled, experienced labor resources, unambiguously rare in the developing countries in the 1950s. In this situation, such assumptions as fixed capital-output ratios, fixed production coefficients in general, and low saving rates, little entrepreneurial capacity, etc. were very appealing indeed, and justified a large role for the government. Of greater importance, however, was the absence of any sort of explicit policy-making procedures. The result in many countries was a melange of policies that added up to confusion and unclear signals, and that reflected the unspecific objectives.

In the particular context of this chapter, it is important to note that much of the criticism of an "import substitution" strategy refers to things other than protection. Wage and price policies, interest rates and other policies relating to the allocation of investment, neglect or explicit penalization of agriculture, and a variety of other instruments were frequently included in the import substitution package. Added to this is the fact that one ministry or agency of a government could often proceed quite independently of others, thereby producing bottlenecks or excess capacity. Finally, one must mention the role of aid donors in the policy process. There is evidence that certain policies were followed, or at least agreed

to, because the aid recipient was under pressure to do so from aid donors. Thus, as we look back at a country's experience, it is tempting to define it as the result of import substitution or export promotion or whatever. Given the way policies got designed and implemented, however, it was a rare country that had as a guiding star any well-articulated, well-defined strategy. Consistency of policy is rarely a characteristic of developing countries, and, as will be argued later, policy inconsistency is a major reason for the emergence of certain difficulties.

3.2. *Country experiences*

Over the last 10–20 years there have been a great number of detailed country studies that have helped to illuminate many of the issues that are part of the import substitution strategy of development. There have also been a series of studies about trade liberalization that have examined mainly the implications of a movement away from trade controls and other protective devices to a more open, outward looking economy. Anyone seeking to understand import substitution and how it has worked in a particular country or to gain some general view of it as a development strategy must read and reflect on these works.⁵ Much of the material in these studies is concerned with incentive structures, especially with respect to how they affect the profitability of producing for the domestic market versus exporting, and for investing in urban manufacturing activities, rather than in rural areas in general and agriculture in particular. Considerable attention has also been given to the costs of rent-seeking and the costs of the absence of a mechanism to compete rents away.

Rather than reviewing this familiar and readily available material, I will tell three stories to see what can be learned about the empirical relevance of the arguments discussed in Section 2. These stories are a comparison of India and Korea, then of India, Korea, and Brazil, and finally a review of total factor productivity in several countries.

3.2.1. *Mainly India and Korea*

When India began to plan its national development soon after independence, it opted for an import substitution strategy. That strategy was especially evident in the last half of the 1950s when protection from imports was afforded to virtually

⁵Studies referred to include the following: Balassa and Associates (1971, 1982); Little, Scitovsky and Scott (1970) which is the comparative review of the multivolume series sponsored by the Organization for Economic Cooperation and Development; the 12-volume study on *Foreign Trade Regimes and Economic Development*, directed by Jagdish Bhagwati and Anne Krueger, sponsored by the National Bureau of Economic Research; a series of books and articles sponsored by Kiel Institute for World Economics and effectively summarized in Donges (1976). There are many others of course.

all manufacturing activities. The protection was of varied forms and was accompanied by other direct controls on the allocation of investment in terms of both its composition and its geographic location. The result was the appearance of a wide range of very high-cost manufacturing activities and the squeezing of agriculture. These policies effectively eliminated the threat of both foreign and domestic competition. Presumably, the expectation was that some inducements other than competition from imports would produce the decline in costs – the increase in productivity – that would enable the country to support this approach. Had productivity growth been rapid, for example, costs would have fallen quickly and the difficulties would have been greatly eased.

A recent book by Ahluwalia (1985) provides a wealth of data on India's experiences since 1960. The data for manufacturing industries show that import availability ratios (defined as imports over imports plus domestic production minus any exports) declined generally and rapidly with few exceptions from 1960 to 1965. Were data available for earlier years, they would doubtlessly show that import substitution, measured in terms of declines in import availability ratios had begun well before 1960. In current prices the ratio of total imports to GNP was 8.2 in 1960 and 10.8 in 1980. In constant prices the ratio is somewhat lower, but changes over the period are about the same. Around the mid-1960s, the rate of import substitution declined in many of these sectors, and by 1980 a majority of the two-digit industries had import availability ratios greater than those that prevailed in 1965. Similarly, the contribution of import substitution to growth declined markedly after 1965 compared to its contribution in prior years.⁶ The evidence seems clear enough that around the middle of the 1960s, India began to move away from the previous heavy reliance on import substitution to a different strategy [Ahluwalia (1985, pp. 118 ff)].

The new policy gave increased attention to exports and backed off slightly from full support of import substitution. The shift was not extreme, however, and did not continue very long but did have some effect on the rate of growth of manufactured exports. Data in Wolf (1982, p. 179) show that the average annual rate of growth of manufactured exports in the final half of the 1960s was less than 5 percent, while in the decade 1967/68 to 1977/78 it was about 15 percent

⁶The contributions of import substitution to growth is measured by Ahluwalia as the difference between actual growth and that which would have taken place if the import availability ratios had remained unchanged at the values obtained at the beginning of the period. It is also useful to note that measures are frequently ambiguous, and vary with the formula used, the time period chosen, weights applied, etc. Perhaps the simplest is the best; the ratio of imports to total availability of a given product, although this measure, as usually calculated, does not take into account inter-industry relationships. Another simple measure is the allocation of total imports between producer and consumer goods. This measure implies a specific notion about which country produces capital goods and the role of the latter in development. For a full discussion, see Bhagwati and Desai (1970, pp. 84–108).

per annum. The policy change, though apparently modest, then had some effect. As will be emphasized below, the effect on export growth of the policy change in India was considerably less than in a number of other countries.

We now consider, even more briefly, Korea's story in these same terms. The general picture is that Korea followed an import substitution strategy throughout the 1950s, but shifted strongly and unambiguously to a much more export-oriented policy in the very early 1960s. The 1950s were indeed unfortunate for Korea. The rate of growth of GDP averaged about 5 percent per year. The rate of growth of manufacturing was considerably higher, but began from an exceedingly modest level. The total absolute increase in manufacturing output, therefore, was relatively small. This point is relevant to the story because it meant that in 1961 or so there was a less well established manufacturing sector that could object to a significant reorientation in policy. Policy change was easier than it would have been with a large, entrenched sector that depended on protection for its good life.

Frank, Kim and Westphal (1975, pp. 92 ff) estimated that in the last half of the 1950s export expansion contributed 5.1 percent to growth of manufactured output, and import substitution 24.2 percent with domestic demand contributing the remainder. In the 1963–70 period, import substitution fell to below 1 percent and in 1970–73 it was negative [Nishimizu and Robinson (1984, p. 193)], while the role of export expansion increased to 38.1 percent. Even in the 1950s, the ratio of imports to domestic use for individual sectors declined very little, and indeed seemed to rise as often as it fell [Krueger (1979, p. 63)]. The ratio of total imports to GDP, of course, rose spectacularly after 1960 as did the ratio of exports to GDP. In 1955, imports were about 10 percent of GDP and in 1980 they were over 40 percent, having risen more or less steadily. Exports, an even smaller percentage of GDP in the 1950s, reached one-third or so by the 1970s. Manufacturing exports performed in an even more impressive way, achieving growth rates that have seldom been matched in the world. From 1973 to 1980, Korean manufactured export growth (in U.S. dollars) averaged over 40 percent per year. Also, of course, GDP growth averaged almost 10 percent per year after the early 1960s. Of equal significance is the fact that Korea weathered the oil shocks of the 1970s better than most countries. The shift in policy in the early 1960s, therefore, had a marked and immediate effect as the economy responded with great power.

Many observers have placed great – some even exclusive – emphasis on the change in foreign trade policy to account for Korea's phenomenal development over the 1960s and 1970s. There seems little doubt that the sharp change in policy mattered greatly, but there are other issues that are of equal, possibly even greater, relevance. The first point refers to magnitudes and explanations. Given our understanding of how export expansion can generate growth, it is difficult to believe that Korea grew as it did simply because it followed an outward looking, export expansion policy. Therefore, one should be cautious about arguing that if

all countries pushed exports as hard as did Korea, then all countries would grow as Korea has grown.

A second point follows from the discussion in Section 2 of this chapter: even were one to accept the argument that export expansion is the heart of the matter, one still must ask why Korea was able to take those steps that did, in fact, push exports. This question cannot be dodged by the economist on the grounds that it is a political or some other kind of issue. As Weintraub (1981) asks: "Why did not Chile, which had an educated population and received large amounts of aid in the 1960s, promote exports as effectively and uncompromisingly as did Korea?" A third point refers to the decision-making process in Korea. Jones and Sakong (1980), in a careful and probing study, concluded that the export spurt in Korea was not mainly a matter of devaluation and export incentives. They argue (pp. 98–99) that total wôn return to exporters was similar in periods of stagnation and of rapid growth. It is essential, they continue, to "look at non-price interventions to comprehend the dynamics of Korean development". They further emphasize the pragmatic approach, the absence of ideology, in the making of economic policy in Korea. There was a willingness to change policies that did not work, an attitude of trial and error. One result is that there is a mixture (Jones and Sakong say "balance") between market forces and direct government intervention, between public and private ownership of productive activity. Finally, of course, there was President Park Chung Hee's full commitment to economic growth without much concern for democracy or decentralization. Evidently, all this is quite different from India, and is, in some sense, more fundamental to understanding Korea's apparent successes and India's alleged failures than are the usual measures of import substitution and outward orientation.

Despite the evidence on sources of growth, there was considerable import substitution taking place in Korea in the 1970s. Data from Frank, Kim and Westphal (1975) for 1970 show that of 1312 major import items, 70 were banned completely and 524 were limited in one way or another. In 1976, 60 items were banned and over 600 restricted in one way or another. Similar data apply to the early 1980s. Korea also has used quantitative restrictions to protect many of its activities, and the familiar escalation of effective rates of protection from lower to higher stages of manufacturing is evident. This evidence suggests that the policy change in the early 1960s was not so much a switch away from import substitution as it was a strong, determined move toward the promotion of exports.

The most powerful evidence in a comparison of Korea and India is that of total factor productivity growth (TFPG). The estimates in Table 30.1 below show unambiguously how far India lagged behind Korea. Not only is TFPG in each Indian industry much lower than in the corresponding Korean industry, but for 14 of the 20 Indian industries. TFPG is negative, as it is for the manufacturing sector as a whole. The data for Korea tell a distinctly different story. The TFPG

Table 30.1
Total factor productivity growth

	India 1960-80	Korea 1960-77	Turkey 1963-76	Yugoslavia 1965-78	Japan 1955-73
Food processing	-3.6	5.3	1.9	-0.6	2.2
Beverages	-3.1				
Tobacco	-3.6			-1.7	
Textiles	1.0	4.5	1.4		1.7
Apparel		1.6	2.7	-0.2	1.9
Footwear	0.7				
Wood products	-3.0	5.6	-1.2	-0.6	1.1
Furniture	2.1	4.9	3.2		-0.1
Paper	0.1	4.5	1.4	0.1	1.6
Printing and publishing	0.5				
Leather	-2.4	2.8	-1.0	-0.1	0.9
Rubber	-5.5	5.9	5.8	2.3	-1.2
Chemicals	-1.3	4.5	1.6	0.1	2.5
Petroleum	-5.6	0.7	0.4	0.2	-0.4
Non-metallic minerals	-1.2			1.7	
Basic metals	-0.9	1.9	0.9	-0.6	1.0
Metal products	-2.2	6.0	1.5	-0.6	0.8
Non-electrical machinery	-1.1	5.7	1.3		3.1
Electrical machinery	-0.2	7.2	1.8	-0.25	4.4
Transport equipment	0.1	5.1	3.3		2.5
Miscellaneous	-4.9				
Manufacturing total	-0.6	3.7	1.3	0.5	2.0

Sources: India, Ahluwalia (1985). Ahluwalia has several sets of estimates, all of which are similar. The one used here is identified as the Translog estimate, p. 131. Japan, Korea, Turkey, and Yugoslavia, Nishimizu and Robinson (1984).

for each sector is positive and only in apparel, petroleum, and basic metals is less than 2 percent. For several activities, the rate is extraordinarily high, 5-7 percent. Some further implications of these data are discussed below. The point here is that TFPG, a crucial indicator of success, showed India at a large disadvantage relative to Korea.

3.2.2. *Mainly Brazil*

Brazil's experience introduces two further issues: large-scale, private, direct foreign investment and a rather sharp return to an import substitution strategy after the mid-1970s. Import substitution had begun in Brazil before World War I.

In 1910, import availability ratios for shoes, clothing, furniture, and wood products were all below 10 percent. So import replacement activities were nothing new to Brazil in the postwar period. Finally, Brazil's rapid industrialization has depended heavily on domestic demand, despite the rapid growth of manufactured exports. There are other differences as well, but these are the most relevant to our story.

Until the middle of the 1960s, Brazil pursued an import substitution strategy with considerable enthusiasm and single mindedness. From about 1965 it backed away from full reliance on import substitution for about a decade, and then resumed, more or less, an import substitution approach. For the 1949–64 interval, import substitution accounted for almost one-quarter (23 percent) of the growth of manufacturing demand and export expansion was essentially zero [Tyler (1976, p. 74)]. From 1964 to 1974 the role of import substitution was negative. It was negative for manufacturing as a whole and for almost every two and four level classifications of activity. For 1974–79 import substitution demand for manufacturing as a whole equalled 10 percent, but for the capital goods sector it was 16 percent and almost 15 percent for intermediate goods, and for consumer goods a low 2.5 percent [World Bank (1983, p. 39)]. In the 1970s, Brazil was obviously beginning to push hard into the domestic production of capital goods. In all intervals, domestic demand was far and away the most important source of demand growth. The ratio of manufactured imports to total available domestic supply was 14 percent in 1949, fell to 6 or 7 percent in the late 1960s, but in 1974 it was 12 percent, and by the end of the 1970s it was back to about 7 percent. The decline in the 1970s was largely due to sharp falls in the import ratios for capital goods [Tyler (1976, p. 68) and World Bank (1983, p. 35)]. Finally, as is well known, Brazil's manufactured exports grew rapidly throughout the 1960s and 1970s. In the period 1965–74, the growth rate reached 37 percent (in U.S. dollars), after Korea, the highest in the world. Growth dropped sharply in the 1974–81 period, to about 25 percent, still a respectable figure. In 1982, Brazil's manufactured exports (as well as total exports) declined by over 12 percent compared to 1981. From 1949 to 1964 data from Tyler (1976, p. 141) show that manufactured exports grew at an annual rate of 3.6 percent. Except for processed food products, exports have always been a very small proportion of total output, and even the ratio of food product export to total output about halved from 1965 to 1980. The average ratio is rising over time, so that the ratio of increments of exports over increments of output exceeds the average.

What does this brief survey add to our story? Brazil has long welcomed direct foreign investment, more so after 1964, and, perhaps more than any other large country, it set its objective simply in terms of imitating the United States as quickly as possible. Direct foreign investment seemed an effective instrument to pursue this objective. The main question of interest in the present context is the

extent to which the large role of foreign investors affects the extent to which the import substitution strategy accomplishes the objective previously outlined.

The data show clearly that a large share of Brazil's manufactured exports is accomplished by multinational enterprises. Estimates given in Tyler (1976, p. 149) show that 34 percent of Brazilian manufactured exports were produced by multinational firms in 1967, and in 1969 the figure had reached 43 percent. Tyler emphasizes that there are doubts about these estimates, but they do indicate approximate orders of magnitude. For the 1970s, data from World Bank (1983, p. 112 ff) and Bacha (1977) show that exports of products requiring relatively sophisticated technology were produced by multinationals to a very large degree. Some small Brazilian firms, however, did export, as did a number of larger Brazilian firms. It seems fair to conclude that the change in policy in the mid-1960s did induce some Brazilian firms to export. Apparently also some of the multinationals that came to Brazil initially expecting to concentrate mainly or even exclusively on the domestic market also responded to policies aimed at increasing exports.

There are several points to make about Brazil's experience. The hypothesis that the presence of multinationals dampened the evolution of a more indigenous technology and of more learning merits attention. In terms of the argument and Figure 30.1 of Section 2 of this chapter, the Brazilians tried to leap from where they were in the less developed country area of the curve AB to the most developed country area of the very much higher curve in the diagram without moving step by step along the climb. They tried to do things that they could not do, and so had to import the skills and knowledge from which little domestic learning seemed possible. Contrast this with Korea, which depended much less on foreign direct investment, and hence did not seek to have what they could not themselves construct and manage. Brazil's new activities were more often (than in Korea) in more advanced, more volatile activities where technology was changing rapidly because of the dominance of the multinationals. This too seems to impede learning, to impede beginning with an established technology and having time to master it before change occurs in some other country of the world. Similarly, several observers have noted the pressure to learn and to respond created by arm's-length transactions appears greater than any that exists in transactions within an enterprise or on a subcontracting arrangement [Westphal et al. (1981)]. This suggests in turn that Brazil may not have learned from its import substitution activities in a way that enabled managers and workers to build from that learning in other and different activities when new opportunities appear.

Of course there are exceptions and the argument in the preceding paragraph does not apply in every instance. The automobile industry in Brazil, for example, heavily dominated by foreign firms, did produce some domestic learning in the production of component parts. The same holds true for some of the new capital

goods producers in Brazil. Still, the point in the previous paragraph seems generally valid, and of great importance in understanding Brazil's story.

The best test of this sort of argument would be data on rates of growth of the productivity of capital and labor in the various activities of the manufacturing sector separated into foreign and domestic enterprises. There are no available data that provide this information. The only productivity growth rate that seems available is for total GDP. Elias (1977) estimates TFPG for several five-year intervals from 1950 to 1974. For the decade of the fifties, TFPG averages a bit less than 4 percent per year, in 1960–65 it drops drastically to 0.58 percent, and in 1965–74 the average is about 3.2 percent per year. Estimates in Bruton (1967) show a much lower TFPG for comparable periods, except for the early 1960s. The Bruton data also show that TFPG seems to have declined through the first years of the 1960s, the last period for which estimates are available. Syrquin (1985) has estimates for Latin America, but not for individual countries. His general conclusion (p. 24) on Latin America is that after 1973 “the growth of output becomes increasingly dependent on the growth of investment and exports through their effect on aggregate demand to prevent idle capacity, rather than by their embodying new technology or enhancing the efficiency of the country”. This statement was doubtless applicable to the Brazilian economy in general and to the manufacturing sector as well. These estimates, however, do not tell us very much about what we need to know about learning in domestic manufacturing activities. It may be noted that labor productivity data alone can be misleading since they neglect the role of the input of capital services. For example, the rates of growth of labor productivity in the Indian manufacturing activities previously discussed are, with two exceptions, positive. For manufacturing as a whole the growth rate of labor productivity was 2.5 percent per annum, compared to –0.6 percent for all factors.

There are additional questions in the Brazilian case. The movement toward increasing openness during the “miracle years” was slowed down and essentially reversed because of balance of payments problems. In 1972 and 1973 the current account deficit averaged about 1.5 billion dollars and in 1974 it was 7.1 billion. Part of this was due to the jump in the price of oil, but a large part seems to be due to the failure of exports in the miracle years to support the growing demand for imports. A growth rate of total exports of about 20 percent apparently could not support the more outward looking strategy. There is also evidence that in the last half of the 1960s and into 1970, the Brazilian economy was operating well below potential output [Bacha (1977)]. Slack domestic demand in these years not only dampened import growth, but also added pressure on firms, especially multinationals, to find foreign markets. This set of circumstances has led some observers to conclude that the miracle years were not miraculous after all, and that openness was sure to fail. All that it did was to increase Brazil's vulnerability to external shocks.

After 1973, the resumption of the import substitution policy was marked by many of the unfortunate characteristics that marked the 1950s and early 1960s. There is wide variation in effective protection across activities, and many of these rates exceed 100 percent. In addition, a variety of non-tariff barriers to importing were put into place. High protection is especially apparent in activities where technology is changing rapidly [World Bank (1984, p. 17)].

An interesting feature of this package is that it suggests that Brazil's policy-makers had learned very little from their previous bouts with import substitution or from observing the experience of other countries. Even if one were to grant the validity of the move back to a general import substitution strategy, still one may argue that the implementation of that strategy reflected very little learning on the part of the Brazilian policy-makers as to the effects of such a hodgepodge of policies. Recall the attention given above to the role of the policy-making process and the extent to which the country learned from its own experience. It seems that Brazil did not, or could not, learn in the way that Korea did. In the 1950s and early 1960s, the methods of implementing the import substitution approach were generally not at odds with the conventional wisdom of economists; in 1974 they were.

Several observers, especially Jones and Sakong (1980), have emphasized the pragmatic, trial-and-error approach to policy-making in Korea. The Koreans seem to react quickly to a situation that was closely monitored and to choose a new policy if one was failing to produce growth, the overriding objective. They have, in a way, discovered what appears to work. This is indeed what learning means, and how it is accomplished. In the case of India, the dominating objective was an economic independence that seemed to lead to avoiding international trade, and certainly foreign investments, to the extent possible. Brazil's ideology seemed to be to become like the United States overnight. The large amount of direct private foreign investment, as argued above, impeded learning in the manufacturing sector and the government policy-makers in the 1970s seemed not to have learned from the experiences of the 1950-65 period. Or if there was learning, the policy-making process prevented it being brought to bear on actual policy-making.

The final point on Brazil refers to the cost of the export expansion policies. Again, there are no data to which one can refer to help our understanding, but some qualitative observations do appear legitimate. It is evident, of course, that subsidization of exports can be just as much a misallocation of resources as protection and other impediments to imports. With an array of subsidies, the mere fact that an activity is exporting is not unambiguous evidence that it is efficient. There has, however, been much less attention given to possible distortions and costs from pushing exports than to those associated with keeping imports out. It is appropriate to raise this issue here because a number of observers have suggested that Brazil's incentives to export were such as to impose

a major cost on it, while this was not the case in Korea. Since India did not go all out on its export expansion policy, the issue is less relevant for it. Even so, some evidence indicates that export subsidies often did not produce sufficient foreign exchange earnings to justify their costs [Bardhan (1984)].

In the case of Korea, Westphal and Kim (1982, p. 272) conclude that the "structural changes induced by the shift to the outward looking policy regime resulted in a more efficient allocation of resources as exports of labor-intensive manufactured products expanded to finance rapidly growing imports of food grains and capital- and skill-intensive manufactured products". In Brazil, on the other hand, Tyler (1981), Weisskoff (1980) and others are less sure. In Brazil, the export incentives, especially those associated with fiscal policy, varied from product to product, and therefore had a misallocating effect in the same way that widely differing effective rates of protection had under import substitution. Thus, certain groups benefited and others were penalized, and the economy distorted. There does not seem to be evidence, however, to the effect that it was increasing misallocations arising from the export promotion policies that accounts for the failure of export promotion to prevent that balance of payments and other problems that led to its modifications in the mid-1970s. Still, it seems clear that problems of this sort were experienced.

In Korea, as well, some observers [e.g. Koo (1984)] have found that the heavy emphasis on exports has begun to create increasing income (and other) inequalities. The strong government support of successful exporters has enabled them to grow rapidly, and to exercise considerable and increasing monopolistic power. Jones and Sakong (1980, p. 192) note that in Korea the new entrepreneur is strictly on his own in a new effort, and consequently most new ventures fail. Those which succeed then receive favored treatment – financial, tax, etc. – and then continue to grow. So bigness is subsidized. Such a policy rests on the assumption – doubtless appropriate in the case of Korea – that the supply and quality of entrepreneurship is strong indeed. Also, a strong government is required. Similarly, employment growth in primary and secondary activities in recent years has declined relative to that in service sectors. If this continues, it will almost certainly produce a decline in the rate of growth of productivity in the future. There also appears increasing inequality in wage rates as the demand for highly skilled people increases much more rapidly than does the demand for the unskilled and semi-skilled [Fei and Ranis (1975), Scitovsky (1985)].

Korea has, over the years, paid relatively little attention to distribution. Cole and Lyman (1971, p. 167) note that this probably reflects the fact that Korea entered the postwar period with very little inequality. During the colonial period, the Japanese held most positions of economic power and the Korean aristocracy was effectively destroyed. The land reform in the late 1940s and the destruction during the war further eliminated any significant sources of great wealth. The remarkable growth in output and exports in the 1960s and 1970s could proceed

therefore with little protest from entrenched interests and, as it absorbed labor rapidly, equality was served, more or less incidentally. The policy that produced the great export boom has also apparently begun to produce significant inequalities and class divisions that at least some observers find disquieting.

This story helps to call attention to the role of initial conditions. In the late 1940s, Brazil had an inequality problem and it had entrenched interests that the state could not ignore; therefore, economic policy-making was more difficult to accomplish, irrespective of the guiding strategy, than was the case in Korea. There are, of course, countless reasons for the appearance of a strong state in Korea, but an important one surely is to be found in the "initial conditions" just described that resulted in such a power vacuum at the end of World War II. Neither India nor Brazil had this particular advantage, and policy formulation and implementation were made more complex. Bardhan (1984) notes that an "overdeveloped state relative to the size and structure of the economy has characterized India since pre-colonial days". He argues later (p. 58) that the "Brahminical cultural environment...is highly suspicious of private capital accumulation and often identifies money making in trade and industry with greed and dishonesty...". Any entrenched hierarchical system, as the Indian cast system certainly was, makes difficult the design of an economic policy that rests on decentralization and on the assumption that individual economic agents can do much on their own. India's initial condition (at independence) therefore not only constrained what the policy-maker could do, but what policies were, in fact, considered.

3.2.3. Capital goods production and technological maturity in Brazil, India, and Korea

The final part of the India/Korea/Brazil story refers to even more nebulous matters, something usually identified as "technological maturity". In almost all developing countries, import substitution began with consumer goods, generally consumer durables. The rationale for this is quite simple. Such goods were being imported, so there was an obvious existing market, and it was a relatively simple matter to keep out the imports of these products by tariffs, quotas, or whatever. Then with the foreign exchange saved by not importing these consumer goods, capital goods would be imported. It was also generally believed that the cost disadvantage in the production of consumer goods would be less than it would be for capital goods. Consumer goods, especially durables, were also deemed less essential for development than were capital goods. Given all these arguments heavy protection was given to a wide range of consumer goods, while little or no protection was given to raw materials and capital goods. In addition, in many countries the importation of capital goods was further encouraged by advanta-

geous exchange rates, easy access to import permits, and to credit. This policy meant that the protection of value added in the production of consumer goods was much higher and much more variable than a survey of nominal rates of protection would indicate. The rationale for subsidizing capital goods seemed to rest primarily on the assumption that capital formation was at the heart of the development process and that there was very little flexibility in the productive system.

This "consumer goods production phase", often referred to as the easy phase, could continue only as long as the domestic market could absorb new consumer goods and increasing quantities of old ones. If import substitution were to continue, then intermediate and capital goods production had to be protected and this would raise the cost of the policy. To avoid this result, the country could seek to export its newly-produced consumer goods. Great attention should be given therefore to manufactured exports. The evidence that countries that did export quickly did not get bogged down by the import substitution strategy supports this point. There were other aspects of this original strategy [see Bruton (1970) and Sheahan (1972)], but in the present context these are the main points.⁷

The original form of the argument emphasized the high relative costs of the domestic production of capital goods and the apparent violation of the dictates of static comparative advantage. It was soon evident, however, that there is no *a priori* reason to believe that capital goods are more costly to produce in the developing countries than are consumer durables. This consideration in turn led to the conclusion that protection should be very similar across the board. In providing greatly divergent rates of protection for various products, the policy-maker was implying that knowledge about costs, economies of scale, externalities, productivity growth, etc. were in fact unknown. Hence the argument that protection, if any, should be uniform.

More recently another argument has been developed about the role of capital goods in the learning and knowledge accumulating process. As noted in Section 2, Hirschman (1968) long ago called our attention to the role of capital goods in the learning process but only recently has it attracted a great deal of attention. The main issue is not the production of capital goods themselves, rather it is the creation of technological capacity – the capacity to develop a more or less continuous flow of new technical knowledge. Brazil, Korea, and India offer convenient examples for the discussion of this issue. All three countries have begun to produce and export capital goods and technical knowledge, and their

⁷One of the other aspects has to do with the composition of capital goods. Capital goods are not a simple malleable glob of productive power, but of course come in many shapes and forms. A study of a disaggregated capital goods sector would be useful, but cannot be undertaken here.

experiences illuminate the role that capital goods production plays or can play in import substitution and development. In the narrow sense, the question is whether a country should seek to create a capital goods capacity, a knowledge-creating capacity, behind some form of protection.

The accumulation of relevant empirical data has been underway for only a few years. Exactly what data provide reasonable measures of technical knowledge-creating capacity is complex, as is the question what constitutes protection of these learning activities. Despite these difficulties and ambiguities the available evidence provides enough information to suggest hypotheses and arguments of great importance to our understanding of development and of economic strength.

Lall (1984a, p. 477), for example, identifies four items as technology imports: the purchase of turnkey projects from foreign engineering companies, the inflow of direct foreign investment from abroad, the licensing of foreign technology, and the importation of foreign capital goods or the purchase of foreign components for the local production of capital goods. On the basis of this classification and the data that he accumulated, Lall concludes that India imported far less technology than did Brazil, Korea, or other newly-industrialized countries. In the fifteen years between 1967 and 1982, India employed no foreign engineering firms as prime contractors. In the 1968–82 period, net inflows of direct foreign investments into India were negative. During the same period, Brazil had a net inflow of \$14 billion and Korea \$648 million, Mexico \$7 billion, Argentina \$1.5 billion, Hong Kong \$3 billion, and so on. A similar result emerges when one normalizes by size of country. Estimates of licensing payments abroad as a ratio of the value added in manufacturing in 1979 were approximately 0.8 percent for India, 1.9 percent for Brazil, and 1.1 percent for Korea. Finally, India's imports of capital goods as a proportion of manufacturing value added was 8.2 percent compared to 8.6 and 41.2 percent for Brazil and Korea, respectively, in the late 1970s. Import content of domestic capital goods production was less than 10 percent for India, about 20 percent for Brazil, and 45 percent for Korea. [All data are from Lall (1984a, p. 477).] Clearly, India was relying much less on the importation of technology and technical knowledge than Brazil and Korea, and indeed all other countries, for its new industrial activities.

The story of technology exports is equally interesting. The cleanest form of the export of technical knowledge would appear to be licensing, consultancy, and technical services supplied in industrial activities. Sanjaya Lall's study (based on his own data and that accumulated by others) show that as of 1981–82, India had some \$500 million in contracts for such services, Korea \$472 million, and Brazil \$357 million. Another indicator of technology export is the export of industrial projects, and here India is far ahead of the other two countries. Lall's data show contract values for India of between \$2.2 and \$2.5 billion, for Korea \$802 million

(which he emphasizes is an overestimate), and for Brazil some \$285 million (probably an underestimate). In civil construction project exports, Korea is vastly larger than the other two because of its extensive contracts in the oil producing countries of the Middle East. Several observers have noted that Korea's great capacity in these construction activities was learned in on-the-job training carrying out many contracts in conjunction with U.S. military activity in Korea.

Despite the arbitrariness of these measures and the roughness of the estimates, one is entitled to conclude from them that India has created a much broader and deeper technological base than is present in either Brazil or Korea, or indeed any other developing country. It has accomplished this largely on its own, and its accomplishment has required a great deal of protection especially with respect to capital goods production. India has achieved substantial "know-why" (Lall's term), and has thereby created a capacity for continuing technological development and responsiveness in new fields and in new activities. Bardhan (1984), who is generally very critical of India's development strategy, notes that "the overall dynamic impact of import substitution in fostering skill-formation and learning-by-doing in a whole range of sophisticated manufacturing industries (producing engineering, machinery, chemical and other products) may not have been negligible, although produced at a very high immediate cost to consumers and industrial users of domestic intermediate and capital goods" (pp. 28–29). Since the only way to ensure learning is to protect the productive activity that produces it, one may argue that India's relative success in generating a truly indigenous technological capacity depended on, even required, the inward looking import substitution oriented policies that have characterized Indian development strategy.

Brazil and Korea present a different picture. As noted, neither country demonstrates the breadth and depth of technology capacity that India does, but there are other differences as well. Westphal and his various colleagues in several articles emphasize that Korea's technological capacity is much more advanced and much more secure in plant operation and production than it is in the design and development of new products and new processes. They go further to say that most of Korea's exports of capital goods do not represent exports of technology. The significant Korean construction activity in the Middle East was primarily a matter of supplying an established product and service at prices that were lower than those of other bidders.

Sung-Hwan Jo argues [in Kumar and McLeod (1981)] that most of Korea's direct investment abroad has been designed to facilitate their own exports and to acquire and develop foreign sources of raw materials. Similarly, the establishment of foreign branches and subsidiaries of Korea's trading companies and banks were largely motivated by the determination to keep exports growing. Korea's capital goods industries – all large producers with considerable monopoly power and access to subsidized credit – exported virtually from the beginning of production. About two-thirds of Korea's exports of machinery and transport equipment

went to developed market economies [Chudnovsky and Nagao (1983, p. 101)], a fact which further suggests that there was little in the way of technology being exported. Brazil and India's capital goods exports, on the other hand, went largely to other developing countries. Some rough estimates of R&D expenditure by a sample of Korean and Indian firms in Chudnovsky and Nagao (1983, p. 132) show that Indian firms did much more R&D than did Korean firms in 1980. Their sample is divided into machine tools, equipment for process industries, and electrical equipment. Each of these is also broken down by ownership. In all categories, Indian firms spent more in absolute terms and as a percentage of output (for India) or sales (for Korea). India's percentages were, with one exception, several times those of Korea. The one exception is the wholly domestic firms in the machine tool sector, where Korean firms spent 4.2 percent of sales on R&D and Indian domestic firms 3.4 percent of their output. All of this evidence is consistent with the argument that India's technological capacity rests on stronger and wider foundations.

Brazilian manufactured exports exceeded India's by a factor of three in 1980, yet India's exports of technology were surely much larger than those of Brazil, and included a much wider range of technologies. Also, of course, Brazil was the only one of the three countries in which foreign-owned and managed firms played a significant role. Another piece of evidence that emerged from a sample survey of Brazilian technology exporters tells us something about the role of price. These respondents stated that "technical factors, more suitable know-how, and better acquaintance with recipient's problems" were much more important than price advantage. On the other hand, high prices were often cited as a reason for failure to win a contract. Thus, low prices will not prevail if quality and appropriateness are not present, but high prices will deter buyers even if quality is evident [Sercovich (1984, p. 593)]. As with all the empirical work on the issues considered here, this result must be treated cautiously. Teubal (1984) found that Brazilian firms put great weight on reputation in their marketing efforts, and that their reputation was enhanced as they supplied products that met increasingly demanding specifications.

What does all this add up to? India has, it seems, carried out an exceptionally successful import substitution policy in the sense that it has led to the creation of an impressive indigenous technological capacity. At the same time, as shown earlier, her output and productivity growth record is extremely unfortunate relative to that of Korea and probably Brazil. Korea's record on output and productivity growth are impressive, but it seems clear that its command of technological know-why is markedly below that of India. Similarly, Brazil, with a much larger rate of manufactured output and exports than India, still lags behind that country in technology exports and in the range and sophistication of its technological capacity. There is, therefore, no simple criterion one may apply to determine which country is more successful and which less.

3.2.4. *Import substitution and total factor productivity growth*

It was urged earlier that productivity is not only the heart of the explanation of increasing output, but is also an important criterion of successful import substitution. Data on productivity growth are less readily available than output data, but there are some series becoming available. Ahluwlia's (1985) book has considerable detailed data on India's productivity growth and a recent article by Nishimizu and Robinson (1984) provides an illuminating study of productivity growth in Korea, Turkey, Yugoslavia, and Japan. A brief discussion of this evidence is helpful to our study. Table 30.1 shows estimates of total factor productivity growth for industries in India, Korea, Turkey, and Yugoslavia. These estimates must be cautiously interpreted since they are not for the same time interval, are not all calculated in the same way, and the whole notion of total factor productivity can be questioned.⁸ In particular, the estimates for Korea and Turkey are probably understated relative to those for India. Despite all these qualifications, the data reveal such a consistent picture that one can conclude that they have some considerable link with reality.

Howard Pack in Chapter 9 of this Handbook reviews some of the more general issues of the Nishimizu/Robinson piece. Concern here is limited to the light that their results shed on the relationship between import substitution and export growth on the one hand and TFPG on the other. They estimate an equation of the form:

$$\text{TFPG} = B_0 + B_{ee}X_{ee} + B_{is}X_{is} + E.$$

In this equation X_{ee} is output growth allocated to export expansion, X_{is} is that allocated to import substitution, and E is the error term. Regressions are estimated from time-series data for each of 13 common sectors for the four countries. (They do not include India in their study.) There are thus 52 estimates of each of the two regression coefficients. Of the estimates of B_{ee} , 26 are significant and positive and two are significant and negative. The remaining 24 are not significant. Thirteen of the estimates of B_{is} are significant and negative, and seven significant and positive. The results therefore provide considerable support for the view that demand created by export expansion is more likely to contribute to TFPG than is demand created by import substitution. In addition

⁸The concept of TFPG, and especially its measurement, are open to so many questions that one worries a great deal about building an argument around it. One worries, but one goes ahead and does it. It seems to me that conceptually the notion is useful (as are other, possibly incompatible notions) and is clear. We know so little on these matters that it seems justifiable to try to learn, what the TFPG approach can teach us, and to check it against other data and arguments. One recognizes that it may well be a weak reed, but economists have learned often from weak reeds. Nelson (1981) and Nadiri (1970) are fine surveys of these matters.

to statistical questions that might be noted – and which the authors emphasize – two other points are relevant to the present story.

(1) Japan apparently is different. Only three of Japan's 26 regression coefficients were significantly different from zero. Similarly, the R^2 's for Japan are markedly lower than those for the other three countries. The statistically significant B_0 's are positive for Japan and negative for the other three countries. Even more impressive is the fact that for Korea 10 of the 13 B_0 's are negative, for Yugoslavia and Turkey 12 of the 13 are negative, and for Japan only 6 of 13 are negative.

A negative B_0 implies that total factor productivity will decline if it is not offset by positive contributions for growth of demand from exports or import substitution. This result suggests additional questions, since negative productivity growth is not easy to explain. The most obvious explanation is the appearance of underutilization of capacity as output or its rate of increase falls, because of slack demand, and inputs are not immediately reduced. Similarly, increasing distortions in the economy may prevent continued full utilization because of production bottlenecks. In the latter case, increased imports of intermediate goods may break the bottlenecks and allow output and measured productivity to rise. In the former case, it is not clear why the source of demand matters, since any source would serve the purpose. In neither case would it appear that exports qua exports are the key factor in explaining TFPG. A third explanation is also possible. The investment that occurs and the new activities that are created are in increasingly high cost areas, and there are no gains in productivity in existing industries to offset the higher costs in the new activities. Given the ubiquity of negative TFPG in Indian industries previously noted, and of the negative B_0 's in Korea, Turkey, and Yugoslavia, this explanation seems doubtful.

Consider another possible interpretation of Japan's results. The rate of growth of total factor productivity in Japan is built into the way the economic system functions. It is a consequence of the continuous search and learning efforts that have taken place for over a century, and that have made the Japanese so adaptable and responsive to opportunities. Japan's great export power – its great production power – is fundamentally due to this characteristic of the economy. Exports occurred because of this characteristic which in turn produces TFPG, rather than exports creating TFPG. It may be noted that TFPG measures do not usually capture quality changes. Such changes are often of great importance, and the limited information available suggests that they were in these years for Korea and Japan, and in some sectors for India. This brief Japanese story illustrates the basic objective of import substitution: to create an economy in which there is a continuous search and learning process that produces sustained increases in the productivity of resources. The regressions seem to suggest that Japan has reached this stage, while none of the other countries has. This, it seems, is the principal result of these regressions.

(2) There are numerous articles that examine the relationship between growth of total exports and growth of GDP [Balassa (1978, 1985), Feder (1983); these articles all have many additional references]. Attention here has been devoted to the Nishimizu/Robinson article because it concentrates on manufacturing and on the role of TFPG and export expansion and import substitution, and this, as argued earlier, is the heart of the issue considered in this chapter. The relationship between growth of GDP and of exports is of course related to the manufacturing TFPG and manufacturing exports. Jung and Marshall (1985) have examined the former relationships (growth of exports and of GDP) in some 37 countries to determine the direction of causation, i.e. does the growth of exports "cause" the growth of GDP or is it the other way around or is there some other force that acts on the two together: Their test of the direction of causation is that proposed by Granger (1969), which involves essentially a matter of the lagging of the explanatory variable behind the one to be explained: X is said to cause Y if current Y can be predicted more accurately by using past values of X than by not using them. Jung and Marshall have regressed the growth of output on past values of itself, on past values of the growth of exports, and on a constant. Similarly, the export growth rate is regressed on the same variables. Constant price data are used. Of these 37 equations, only four (Indonesia, Egypt, Costa Rica, and Ecuador) are consistent with the hypothesis that export growth causes output growth. For six of the countries the equations show that export promotion reduces growth of GDP. One of these six is Korea, and neither Taiwan nor Brazil offer support for the causal role of exports.

One must conclude from all this that the statistical results are inconclusive. Such efforts have been helpful, of course, but have not led us to a common position. Perhaps, as much has been accomplished by regressions and correlations as can be expected, at least as these regressions are presently designed. The main difficulty, however, seems not be statistical, but conceptual. We still understand so little about searching and learning and productivity growth, and, therefore, about the relationship between these and anything else.

4. Some policy and other conclusions

One might, with considerable profit, review other country and cross-country studies. From such studies come additional insights and bits and pieces of evidence that add to our knowledge and, equally often, reveal, in a particularly illuminating way, our ignorance. Thus, generalizations are exceptionally precarious and policy recommendations always subject to review. Ignorance must be taken seriously. Even so, some policy (and other) conclusions are useful and also help to make some of the arguments of Sections 2 and 3 somewhat clearer.

4.1. General conclusions

In recent years a large number of economists have found it the fun thing to do to lambast the import substitution strategy of development. I have avoided doing this, because I think much of the lambasting is unjustified, and frequently concentrates on the wrong issues, and because the purpose of this chapter is to study import substitution. If it were complete nonsense, no chapter would be necessary. That the strategy has frequently caused problems is not disputed by anyone, although it is not always clear that the problems were due to import substitution as such. The basic idea of the import substitution strategy is that protection is necessary for most contemporary developing countries at some point in their history in order to establish an internal routine that generates increasing welfare. More specifically, the objective is to establish a flexible, responsive economy that can take advantage of opportunities generated in the world at large and, more importantly, that can generate its own opportunities. Behind this protection, new activities are created that modify the structure of the economy and that induce learning. The achievement of both these objectives is necessary if import substitution is to accomplish the intended objectives. Learning is reflected most clearly in total factor productivity growth and in the emergence of an indigenous technological capacity. This latter notion is admittedly fuzzy and TFPG is also open to severe measurement and conceptual problems. At some point when the new routines are established and productivity is growing steadily and transformation capacity has greatly increased so that the economy can move smoothly and quickly into new activities, then protection has accomplished its purpose. If an economy can produce only one or two products (or services) and can move into new activities only at great cost, arguments built around comparative advantage are not very convincing. Protection then is a form of investment the return on which is a more productive, more independent economy.

The empirical evidence to support any development strategy is, of course, open to many doubts. The India story is especially illuminating. India has perhaps pursued the most consistent policy of import substitution of any of the developing countries. The evidence on TFPG in India is dismal indeed, but the evidence of a technological maturing, her genuine know-why, is surely impressive. Certainly, India's strategy has imposed heavy costs on the society, whether these costs are or will be justified is, of course, impossible to tell. The one unambiguous result of the Indian experience is the demonstration of the importance of the policy-making process. The import substitution strategy as followed in India has created an entrenched interest group that makes any moves toward a new policy – e.g. toward a liberalization and opening up – exceedingly difficult and time consuming. It is, however, to be emphasized that it is the policy-making process that is at issue, not import substitution as such that is the source of the

problem. Any package of policies helps some groups, and these groups will, if they can, prevent its change.

Korea's story looks much more convincing, but the evidence is far from overwhelming, and its success in the technological maturing race doubtlessly lags behind that of India. Korea's initial conditions, described so effectively by Cole and Lyman (1971), and her effective decision-making machinery seem to emerge as more relevant to the explanation of her success than does a given development strategy. Korea's protection has been marked in a variety of ways and the openness of the economy seems more apparent than real. The strong export incentive and record induce learning and prevent bottlenecks from stopping the economy. So the source of her growth remains ambiguous. In Brazil the frequent policy changes and the large role of multinationals makes her story unclear as well. The evidence on TFPG and technological maturing in Brazil is less clear-cut than for either India or Korea, but consistency of policy and a greater reliance on domestic firms might reveal a now hidden strength. Finally, the many regressions are interesting, informative, and, as we are increasingly recognizing, probably not very powerful.

4.2. Some more specific conclusions

So any conclusion as to the power of import substitution (or any other strategy) remains inconclusive. Despite this agnosticism, there are important policy ideas and conclusions in the analysis presented in the preceding pages. I turn now to a brief review of those that seem to bear most directly on policy matters.

(1) The attention given to productivity growth, and its principal source, learning – learning by doing, by accumulating experience, by trial and error – emphasized three points:

- (a) simply the building and operating of modern factories by foreign investors will rarely create much indigenous learning nor will it lead to a dissemination of the learning that does take place;
- (b) the new ideas and technologies to which managers and labor are exposed must have some link, some overlap, with the ideas and technologies that they presently know and employ; and
- (c) some kind of a capital goods sector is, generally, an important source of learning and facilitates the evolution of an indigenous technological capacity.

(2) Much of the literature tends to include, under the import substitution heading, a range of specific policies that are recognizably distortional in their effects. Many countries have in fact adopted policies that severely distorted their economy, and surely penalized learning in a variety of ways, but such policies are in no sense necessary for the implementation of an import substitution development policy. To repeat a statement made earlier: the purpose of import substitution is not to distort the economy. It was also emphasized that protection takes

many forms, and a particular policy that protects one country at one time may not do so at another time or in another country. Protection is not simply tariffs and quotas. Forbidding direct foreign investment is protection, as is the discouraging of foreign tourists, of foreign advisors, of foreign training. The exchange rate can be used as a source of protection, as can wage policy. Countries with a high personal saving rate and a strong capital goods sector are more protected than are countries with a very high marginal propensity to consume or no capital goods sector. And so on. So when comparisons are made of the openness of several economies, great care is necessary. Similarly, the effectiveness of other policies may be expected to be different because of these considerations. Generalizations across countries about appropriate policies to effect import substitution can, therefore, be done only at a very high level of abstraction.

(3) The role that protection can play is especially illuminated by the experiences of a number of countries during World War II and, to some extent, during the Great Depression of the 1930s. This natural, non-distorting protection, combined with the war, created unambiguously genuine profit opportunities at a time when importing was virtually impossible. Economic agents responded well, ways were found to adjust, adapt, and modify, in order to take advantage of these opportunities. The results in terms of TFPG and the range of outputs were often impressive. This experience suggests that importance of a recognized reliable demand as a means of eliciting an increasing supply through productivity growth and saving induced by anticipated investment opportunities, rather than by income. Such an argument does not mean that there is unlimited supply capacity available waiting to be found, and at some point a more fundamental consideration of supply is necessary [Bruton (1985)]. The natural protection and war-time evidence is impressive, however, of the capacity of the economies to respond when subjected to the appropriate kind of demand pressure.

This experience also suggests that a policy package that seeks to replicate natural protection may be a useful guide. An across-the-board common nominal tariff is now generally recognized as the most appropriate tariff that is administratively feasible. Given the common tariff schedules, an exchange rate that “undervalues” domestic currency affords additional protection of a general sort.⁹ Undervaluation would, by definition, lead to an accumulation of foreign exchange, an advantage in itself in the fight against a stop-go situation. Mainly, however, the undervaluation helps to create profitable opportunities that are evident to the community at large. The undervaluation plus the common tariff helps to direct attention away from imports of physical capital goods that do not lend themselves to using available resources with ever-increasing productivity. The general argument here, and the evidence from several countries, also suggests

⁹To repeat a point made earlier, in a world of large and rapid capital movements, large-scale aid, and foreign investment the determination of the “correct” exchange rate, even conceptually, is no small matter. The point in the text is to call attention to the advantages of keeping foreign currency expensive as a means of inducing search.

that the widespread practice of subsidizing inputs is not nearly as effective as guaranteed prices – at a favorable level – as a means of eliciting productivity growth. Finally, natural protection doubtless encouraged saving, or at least made consumption less enticing, and high saving rates offer many advantages.

(4) The potential role of a capital goods sector is especially interesting and especially relevant. The protection of the capital goods activities is different in purpose from that for consumer durables or other standardized products. Observers vary in the strength of their convictions on the role of the capital goods sector, but there is no doubt that an increasing number of economists are convinced that such a sector is crucial to the creation of a growing economy. For such activities to evolve, to begin to evolve, requires protection of some form or other. Thus, import substitution is involved and hence imported technical knowledge is to be used sparingly and selectively. The capital goods sector is thus the main source of the emergence of the indigenous technological capacity that is essential to independent and sustained development.

(5) The evidence suggests that the developing country is most likely to succeed in the capital goods sector if it can carve out a special niche, rather than try to compete in the large-scale, mass-produced standardized products. Thus, the most convincing success stories refer to the design and production of a specific product or service that solves a well-defined problem. Output in these new capital goods sectors is likely to be both more heterogeneous and more discrete than in the more developed countries. This is a major reason why know-why is so important. Know-how is not enough. Automobiles, for example, appear to be the wrong kind of activity, and yet the developing world is full of automobile assembly plants, many of which are white elephants.

(6) Numerous case studies also indicate that activities that are engineering based, as opposed to science based, are more suitable and more likely to provide the kind of experience and learning that can be effective in the developing country. A similar point is that activities in which the basic technology is changing rapidly are probably a bad bet. This is surely the case at the early stages of capital goods activity. Where the basic technology is changing rapidly, learning time is squeezed so much that few countries would be able to achieve mastery of the fundamental materials.

(7) It is difficult to believe that exports qua exports are especially significant. Perhaps their most important role is as a means of importing technical knowledge in a directly effective way. This possibility has been mentioned by a number of people, but a thorough investigation does not seem to be available. The role of foreign investment is equally ambiguous, and here so much depends on the capacity of the host country to limit and direct the foreign investor that even abstract generalizations are risky.

(8) The country studies show a great range of experiences. Some governments learn, others do not. Some are able to design effective policies and manage them well and keep rent-seeking under control, and others are not. Corruption is out of

hand in some and is downright productive in others. The objectives of governments and societies differ, as do initial conditions and resource endowments. All of this means that the design of policies and the explanation of events must be very country specific, and a general theory can, at best, help determine the issues to address and the questions to ask.

(9) A more general point refers again to initial conditions and to history and to the general social environment. Mason (1984) suggests that Korea has “perhaps grown so rapidly because it was occupied by Koreans” (p. 19). Similarly, Frances Stewart [in Fransman and King (1984)] notes that “in trying to explain why some societies innovate effectively and others do not, the fundamental and underlying explanation often seems to lie in the realm of history and interests, rather than in particular policies” (p. 88). Such statements remind us of our ignorance, on the one hand, and the great difficulties of policy-making, on the other. The policy-maker is never looking at a blank sheet on which he can put down what an objective, highly competent, but extremely narrow analysis tells him is the right policy. This is especially the case when it comes down to designing a specific policy in a specific country at a specific time.

(10) The “right” policy or “right” broad strategy depends then on many things. This conclusion is especially relevant when, as just noted, one recognizes that all policies are not equally doable. What the policy analyst must then be equipped to do is not to parrot, import substitution or outward looking, but to be able to so examine the economy as it is at the moment and determine what policy instruments are likely to be most effective at the moment. Perhaps this is the main thing that we have learned.

It is essential, however, to emphasize the conclusion that, while we must continue to take ignorance seriously, we have, as well, learned a great deal about import substitution since the 1950s. The idea that some form of protection is in order to enable a country to establish its place in the world economy, in order to establish an economy that is flexible and resilient, is a fundamental idea. To get the form of this protection right and to get the changes that take place behind this protection to produce this kind of economy, is what import substitution is all about.

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¹⁰This list includes works that deal with the general issues of the chapter but not specifically cited in the text.

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